FOR TEACHERS ONLY

The University of the State of New York
REGENTS HIGH SCHOOL EXAMINATION

PS–ES PHYSICAL SETTING/EARTH SCIENCE

Tuesday, August 16, 2005 — 12:30 to 3:30 p.m., only

SCORING KEY AND RATING GUIDE

Directions to the Teacher:

Refer to the directions on page 3 before rating student papers.

Updated information regarding the rating of this examination may be posted on the New York State Education Department's web site during the rating period. Visit the site http://www.emsc.nysed.gov/osa/ and select the link "Latest Information" for any recently posted information regarding this examination. This site should be checked before the rating process for this examination begins and at least one more time before the final scores for the examination are recorded.

Part A and Part B–1
Allow 1 credit for each correct response

Part A

1 . . . . **3**	13 . . . . **3**	25 . . . . **1**
2 . . . . **4**	14 . . . . **4**	26 . . . . **2**
3 . . . . **3**	15 . . . . **2**	27 . . . . **2**
4 . . . . **4**	16 . . . . **4**	28 . . . . **1**
5 . . . . **1**	17 . . . . **3**	29 . . . . **2**
6 . . . . **4**	18 . . . . **2**	30 . . . . **3**
7 . . . . **4**	19 . . . . **3**	31 . . . . **4**
8 . . . . **2**	20 . . . . **3**	32 . . . . **3**
9 . . . . **1**	21 . . . . **3**	33 . . . . **4**
10 . . . . **1**	22 . . . . **4**	34 . . . . **1**
11 . . . . **2**	23 . . . . **4**	35 . . . . **3**
12 . . . . **2**	24 . . . . **3**	

Part B–1

36 . . . . **1**	44 . . . . **2**
37 . . . . **1**	45 . . . . **4**
38 . . . . **2**	46 . . . . **2**
39 . . . . **2**	47 . . . . **3**
40 . . . . **3**	48 . . . . **4**
41 . . . . **4**	49 . . . . **1**
42 . . . . **2**	50 . . . . **3**
43 . . . . **4**	

Directions to the Teacher

Follow the procedures below for scoring student answer papers for the Physical Setting/Earth Science examination. Additional information about scoring is provided in the publication *Information Booklet for Scoring Regents Examinations in the Sciences*.

Use only *red* ink or *red* pencil in rating Regents papers. Do *not* correct the student's work by making insertions or changes of any kind.

On the detachable answer sheet for Part A and Part B–1, indicate by means of a checkmark each incorrect or omitted answer. In the box provided at the end of each part, record the number of questions the student answered correctly for that part.

At least two science teachers must participate in the scoring of each student's responses to the Part B–2 and Part C open-ended questions. Each of these teachers should be responsible for scoring a selected number of the open-ended questions on each answer paper. No one teacher is to score all the open-ended questions on a student's answer paper.

Student's responses must be scored strictly according to the Scoring Key and Rating Guide. For open-ended questions, credit may be allowed for responses other than those given in the rating guide if the response is a scientifically accurate answer to the question and demonstrates adequate knowledge as indicated by the examples in the rating guide. In the student's answer booklet, record the number of credits earned for each answer in the box printed to the right of the answer lines or spaces for that question.

Fractional credit is *not* allowed. Only whole-number credit may be given to a response. Units need not be given when the wording of the questions allows such omissions.

Raters should enter the scores earned for Part A, Part B–1, Part B–2, and Part C on the appropriate lines in the box printed on the answer booklet and then should add these four scores and enter the total in the box labeled "Total Written Test Score." The student's score for the Earth Science Performance Test should be entered in the space provided. Then, the student's raw scores on the performance test and written test should be converted to a scaled score by using the conversion chart that will be posted on the Department's web site http://www.emsc.nysed.gov/osa/ on Tuesday, August 16, 2005. The student's scaled score should be entered in the labeled box on the student's answer booklet. The scaled score is the student's final examination score.

All student answer papers that receive a scaled score of 60 through 64 **must** be scored a second time. For the second scoring, a different committee of teachers may score the student's paper or the original committee may score the paper, except that no teacher may score the same open-ended questions that he/she scored in the first rating of the paper. The school principal is responsible for assuring that the student's final examination score is based on a fair, accurate, and reliable scoring of the student's answer paper.

Because scaled scores corresponding to raw scores in the conversion chart may change from one examination to another, it is crucial that for each administration, the conversion chart provided in the scoring key for that administration be used to determine the student's final score. The chart in this scoring key is usable only for this administration of the examination.

Part B–2

Allow a total of 15 credits for this part. The student must answer all questions in this part.

51 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The higher the altitude of the top of the cloud, the greater the probability that hail will be produced.

— direct relationship

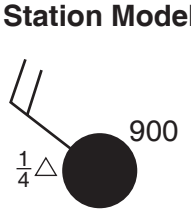
52 [1] Allow 1 credit for **stratosphere**.

53 [1] Allow 1 credit for one day per year.

54 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 2 credits if five or six weather conditions are correctly indicated, using the proper format.
- Allow 1 credit if only three or four weather conditions are correctly indicated, using the proper format.

A 2-credit response is shown below:



Note: Feathers may be placed on either side of the staff.

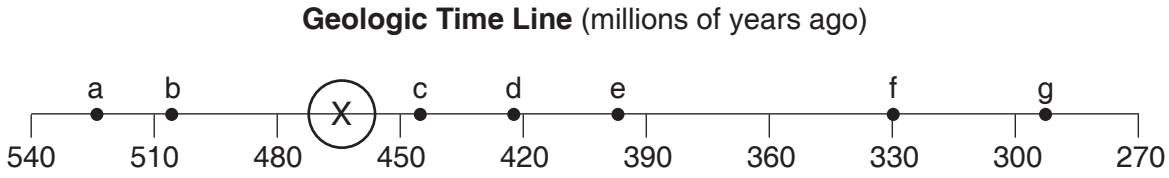
Do *not* allow credit for numbers with units.

55 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Seek indoor shelter.

— If indoors, stay away from windows.

56 [1] Allow 1 credit if the center of the **X** falls within the circle shown on the time line below.



57 [1] Allow 1 credit for **Cambrian** Period**.**

58 [1] Allow 1 credit for **Appalachian** Orogeny *or* **Alleghanian** Orogeny.

59 [1] Allow 1 credit for ***f*** *or* ***g***.

60 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The landscape has a high relief.

— There is a large difference in elevation between the top and bottom rocks in the cross section.

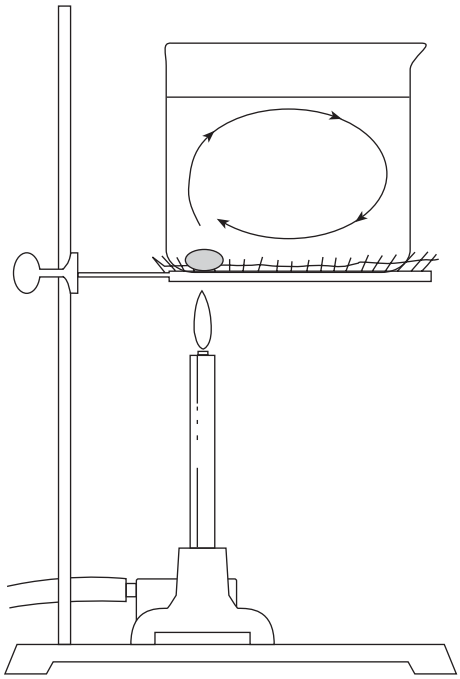
— steep slopes

— high elevation

61 [1] Allow 1 credit for **Newark Lowlands**.

62 [1] Allow 1 credit for arrows that exhibit clockwise convective circulation.

Example of a 1-credit response:



63 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The arrival time of the *P*-wave at station A is later than the arrival time of the *P*-wave at station *B*.

— The arrival time difference between the *P*-wave and *S*-wave is greater at station *A*.

— The amplitudes of the *P*-wave and *S*-wave tracings are greater on the seismogram at station *B*.

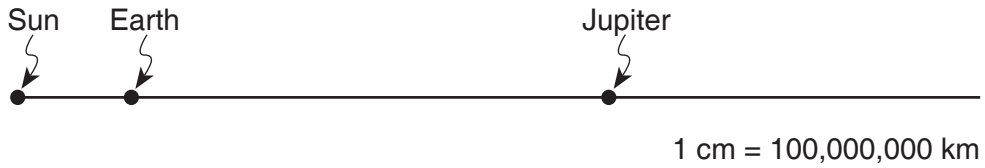
64 [1] Allow 1 credit for 15 minutes 50 seconds (±10 seconds).

Part C

Allow a total of 20 credits for this part. The student must answer all questions in this part.

65 [1] Allow 1 credit if the center of the dot for Jupiter is 7.8 (±0.4) cm from the center of the Sun and the dot is labeled.

A 1-credit response is shown below:



Allow credit if a symbol other than a dot is used to correctly locate and label the position of Jupiter.

66 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Clockwise spiral snail shells are found in greater numbers.

— more clockwise fossil shells than counterclockwise

67 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

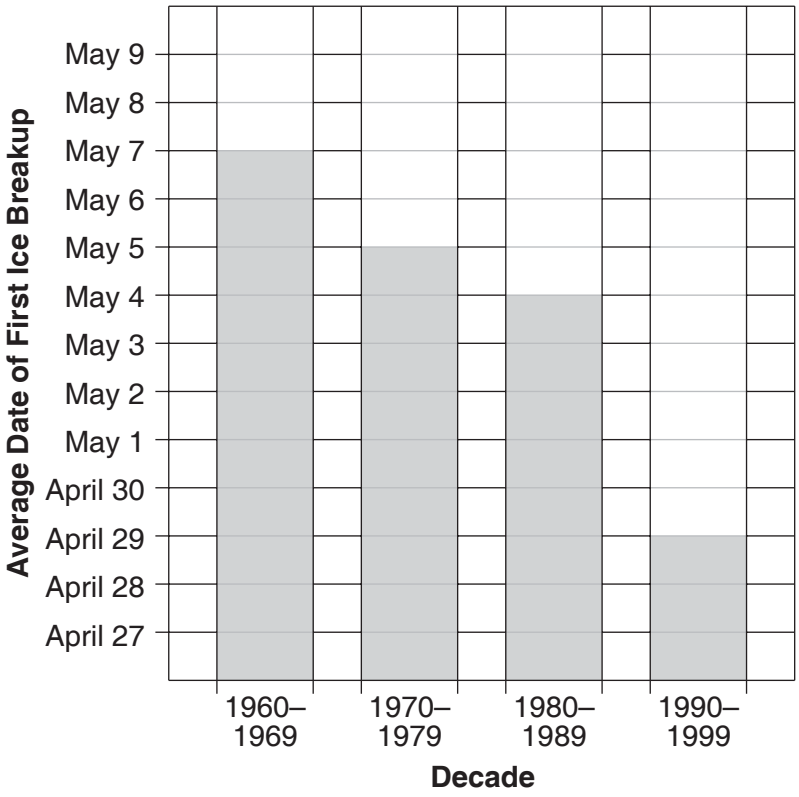
— New York State experienced a warmer climate when it was located closer to the Equator.

— The North American Plate has drifted northward from the equator region over time.

— New York State used to be in the tropics.

68 [1] Allow 1 credit if all four bars are correctly drawn.

A 1-credit response is shown below:



Note: Do *not* allow credit if the student constructs a line graph.

69 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— The climate appears to have warmed.

— Average yearly temperature increased.

Allow credit for a response that is consistent with the student's graph in question 68.

70 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— They are at different latitudes.

— Nenana is located farther from the equator.

— The Sun's apparent daily path is longer in Nenana on May 5th.

— The tilt of Earth's axis causes a longer period of daylight in Nenana.

71 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 2 credits for correctly listing *three* agents of erosion and identifying a characteristic surface feature formed by each of the three agents of erosion.

- Allow 1 credit for correctly listing only *two* agents of erosion and identifying a characteristic surface feature formed by each of the two agents of erosion.

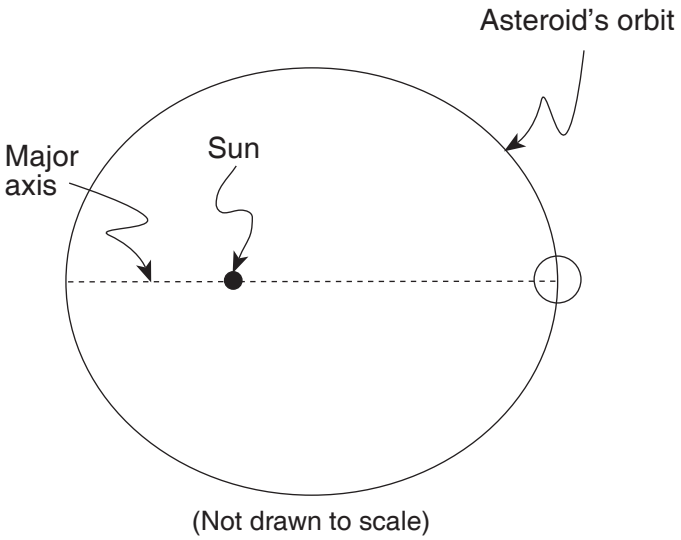
or

Allow 1 credit for correctly listing three agents of erosion even if the surface feature is incorrectly identified.

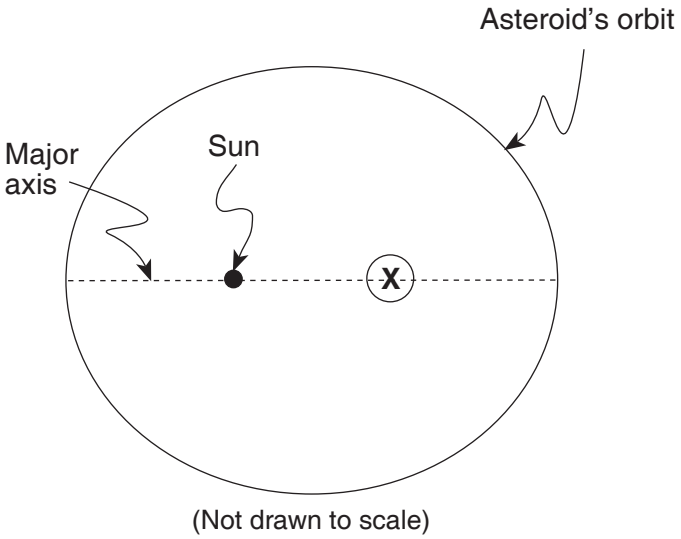
Acceptable responses include, but are not limited to:

Agent of Erosion	Surface Feature Formed
Waves	beach, sandbars, barrier islands
Wind	loss of topsoil, dunes
Glacier	U-shaped valley, moraines, drumlins
Running water (streams)	V-shaped valley, deltas, meanders
Mass movement	landslides, slumps

72 [1] Allow 1 credit if the center of the circle is within the circle shown.



73 [1] Allow 1 credit if the center of the **X** is within the circle shown.



Note: Allow credit if a symbol other than **X** is used.

74 [2] Allow a maximum of 2 credits, allocated as follows:

- Allow 1 credit for **4** *or* **4.0** (±0.2).
- Allow 1 credit for the correct unit. Acceptable responses include, but are not limited to:

  — inches/mile

  — in/mi

75 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

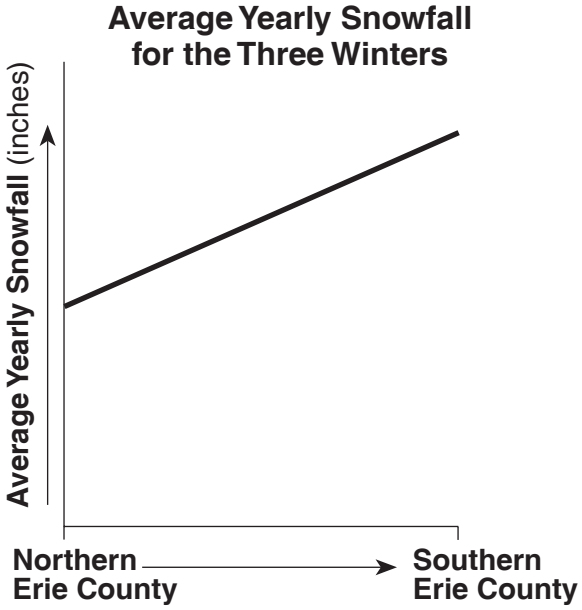
— When Lake Erie is covered with ice, the air moving over it will pick up less moisture.

— Less evaporation will take place.

— When Lake Erie is covered with ice, the air is heated less.

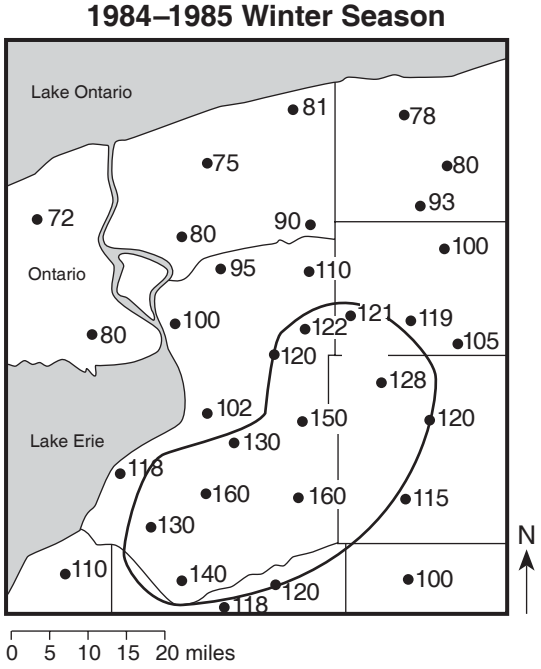
76 [1] Allow 1 credit if the line graph shows that southern Erie County has more snowfall than northern Erie County.

Example of a 1-credit response:



77 [1] Allow 1 credit for a correctly drawn 120-inch snowfall isoline.

Example of a 1-credit response:



Note: If additional isolines are drawn, all isolines must be correct to receive credit.

78 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— 5,700 years

— 5.7×10^3 years

79 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— U^{238} has a longer half-life.

— U^{238} can be used to date older geologic events.

— C^{14} is used to date organic remains while U^{238} is not.

80 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— crater

— impact crater

— large hole

81 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— deposition of sediment

— erosion

— subduction

— volcanic lava flow

— weathering

82 [1] Allow 1 credit. Acceptable responses include, but are not limited to:

— Dust that was thrown into Earth's atmosphere caused a change in Earth's climate.

— The impact caused fires that killed plants and animals.

— Dust from the impact blocked sunlight that cooled Earth and caused many green plants to die.

The *Chart for Determining the Final Examination Score for the August 2005 Regents Examination in Earth Science* will be posted on the Department's web site http://www.emsc.nysed.gov/osa on Tuesday, August 16, 2005. Conversion charts provided for previous administrations of the Regents Examination in Earth Science must NOT be used to determine students' final scores for this administration.

Map to Core Curriculum

August 2005 Physical Setting/Earth Science			
Question Numbers			
Key Ideas/Performance Indicators	Part A	Part B	Part C
STANDARD 1			
Math Key Idea 1			68,70,74
Math Key Idea 2	22	48,51,52,56,60	
Math Key Idea 3			65,72
Science Inquiry Key Idea 1			
Science Inquiry Key Idea 2			
Science Inquiry Key Idea 3	14,26,32,33	37,54,61,63	66
Engineering Design Key Idea 1			
STANDARD 2			
Key Idea 1			
Key Idea 2			
Key Idea 3			
STANDARD 6			
Key Idea 1			69,76,77,81,82
Key Idea 2	7,10,11,13,15,16, 17,18,24,26	36,37,38,39,40, 41,42,43,44,45, 46,47,48,49,50, 53,54,60,62,63	66,68,71,78,79
Key Idea 3		44,56,57,58,59	65
Key Idea 4			
Key Idea 5		64	72,73,75,78,79
Key Idea 6			
STANDARD 7			
Key Idea 1			
Key Idea 2		55	
STANDARD 4			
Key Idea 1	1,2,3,4,5,6,7,8,9, 10,11,12,13,14, 15,16,18	36,37,38,39,41, 50,56,57,58,59	65,66,67,72,73, 76,78,79,80,82
Key Idea 2	17,19,20,21,22, 23,24,25,26,27, 28,29,30,31,34	40,42,43,44,45, 46,47,48,49,50, 51,52,53,54,55, 60,61,62,63,64	68,69,70,71,74, 75,77,81
Key Idea 3	32,33,35		81
REFERENCE TABLES			
ESRT 2001 Edition	8,12,14,20,21,22, 23,25,27,29,32, 33,34,35	47,52,53,54,56, 57,58,59,61,63	65,67,68,72,73